

Effective youth suicide prevention: evidence from Kentucky

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Chapter V - Results

The Stop Youth Suicide Campaign is a holistic suicide awareness campaign. In other words, the programme seeks to provide appropriate information and assist all stakeholders, e.g. individuals, communities and governments/policy makers to make informed decisions. In Kentucky, the Campaign has been successful in changing some laws, introduce suicide education and training at schools and provide interventional services as well as prevention strategies throughout Kentucky. A measure of success is a sustained drop in suicide rates over time. As mentioned before, the suicide rates in Kentucky began to decline annually following the Stop Youth Suicide Campaign.

However, of interest is whether the Campaign has had any impact on changing attitudes and perceptions and hence behavior, if so, how has this change been affected. The CDC data set provides a number of behavioral outcome measures on adolescents which are collected independently of the Campaign (see Chapter 4). These variables can be used to assess and evaluate the effect of the Campaign across Kentucky.

1) Suicide ideation, planning, and attempt

According to the Kentucky 2013 YRBS data, 15% of the Kentucky High School Students (KyHSS) reported seriously considering attempting suicide during the 12 months before the survey (Table 1). The prevalence of suicide ideation didn't change significantly from 2011 (14.8%) and showed no significant difference with the 2013 U.S prevalence (17%). There was no significant change in the prevalence of suicide planning among KyHSS in 2013 (12.6%) compared with 2011 Kentucky data (13.7%) and with the 2013 U.S. prevalence (13.6%). There was a significant decrease in the percentage of KyHSS who reported attempting suicide (one or more times during the 12 months before the survey) in 2013 compared to 2011 (7.7% vs. 10.9%), and a significant decrease in the 2013 reported

attempted suicide that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or a nurse (2.9% vs. 4.6%). In 2013, KyHSS were as likely as their U.S. peers to attempt suicide (7.7% vs. 8.0%) and to attempt suicide that required medical treatment (2.9% vs. 2.7%).

Kentucky high school female students were more likely than male students to have seriously considered attempting suicide (during the 12 months before the survey) (19.2% vs. 10.9%) (Table 2). More females than males made a plan about how they would attempt suicide (during the 12 months before the survey) (14.3% vs. 10.9%). While females were more likely than males to report having attempted suicide one or more times during the 12 months before the survey (9.2% vs 5.9%), there was no significant gender difference in **attempted suicide that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse** (during the 12 months before the survey) (3.2% for females, 2.6% for males).

Table 1: Prevalence of risk behaviors among Kentucky high school students, 2011-2013, and U.S high school students, 2013.

YRBS (selected questions)	Ky 2013	U.S. 2013	p-value ^a	Ky 2011	p-value ^b
Carried a weapon	20.7	17.9	0.07	22.8	0.34
Carried a gun	7.5	5.5	0.05	8.6	0.39
Carried a weapon on school property	6.4	5.2	0.18	7.4	0.50
Were threatened or injured with a weapon on school property	5.4	6.9	0.03	7.4	0.08
Were in a physical fight	21.2	24.7	0.02	28.7	0.00
Were injured in a physical fight	2.8	3.1	0.59	4.2	0.05
Were in a physical fight on school property	6.0	8.1	0.04	11.4	0.00
Did not go to school because they felt unsafe at school or on their way to or from school	7.0	7.1	0.96	8.4	0.29
Were electronically bullied	13.2	14.8	0.19	17.4	0.01
Were bullied on school property	21.4	19.6	0.25	18.8	0.20
Were ever physically forced to have sexual intercourse	9.6	7.3	0.01	11.0	0.27
Experienced physical dating violence	9.8	10.3	0.73	—	—
Experienced sexual dating violence	9.8	10.4	0.61	—	—
Felt sad or hopeless	25.7	29.9	0.02	27.0	0.52
Seriously considered attempting suicide	15.0	17.0	0.23	14.8	0.94
Made a plan about how they would attempt suicide	12.6	13.6	0.45	13.7	0.43
Attempted suicide	7.7	8.0	0.72	10.9	0.04

Attempted suicide that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse	2.9	2.7	0.72	4.6	0.08
Drank alcohol before age 13 years	19.0	18.6	0.78	20.5	0.47
Currently drank alcohol	30.4	34.9	0.01	34.6	0.05
Had five or more drinks of alcohol in a row	19.4	20.8	0.36	23.2	0.04
Reported that their largest number of drinks in a row was 10 or more	6.3	6.1	0.81	—	—
Ever used marijuana	34.0	40.7	0.01	37.4	0.23
Tried marijuana before age 13 years	8.5	8.6	0.88	10.0	0.26
Currently used marijuana	17.7	23.4	0.00	19.2	0.48
Ever used cocaine	4.5	5.5	0.16	7.5	0.00
Ever used hallucinogenic drugs	—	7.1	—	—	—
Ever used inhalants	7.1	8.9	0.03	11.4	0.00
Ever used ecstasy	4.2	6.6	0.00	6.6	0.01
Ever used heroin	—	2.2	—	5.2	—
Ever used methamphetamines	3.7	3.2	0.48	5.6	0.03
Ever took steroids without a doctor's prescription	2.9	3.2	0.55	5.3	0.00
Ever took prescription drugs without a doctor's prescription	12.4	17.8	0.00	19.0	0.00
Ever injected any illegal drug	—	1.7	—	4.2	—
Were offered, sold, or given an illegal drug on school property	20.6	22.1	0.32	24.4	0.04
Ever had sexual intercourse	44.7	46.8	0.47	51.8	0.05
Had sexual intercourse before age 13 years	5.4	5.6	0.82	7.2	0.10
Had sexual intercourse with four or more persons	12.6	15.0	0.10	16.6	0.07
Were currently sexually active	31.7	34.0	0.39	37.7	0.09
Did not use a condom	46.9	40.9	0.04	49.4	0.43
Did not use birth control pills	80.1	81.0	0.71	78.8	0.62
Did not use an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon)	97.4	98.4	0.21	—	—
Did not use a shot (e.g., Depo-Provera), patch (e.g., OrthoEvra), or birth control ring (e.g., NuvaRing)	95.1	95.3	0.92	—	—
Did not use birth control pills; an IUD or implant; or a shot, patch, or birth control ring	72.7	74.7	0.45	73.8	0.74
Did not use both a condom during and birth control pills; an IUD or implant; or a shot, patch, or birth control ring before last sexual intercourse	93.4	91.2	0.11	90.5	0.12
Did not use any method to prevent pregnancy	15.1	13.7	0.46	16.2	0.64

Drank alcohol or used drugs before last sexual intercourse	18.7	22.4	0.10	16.8	0.49
Were never taught in school about AIDS or HIV infection	19.3	14.7	0.03	16.1	0.19
Were never tested for HIV	—	87.1	—	—	—

^a p-value for the t-test comparing prevalence between Kentucky and U.S. high school student risk behaviors, 2013.

^b p-value for the t-test comparing prevalence between Kentucky high school student risk behaviors in 2013 and 2011.

2) Felt sad or hopeless

KyHSS were less likely to feel sad or hopeless (almost every day for 2 or more weeks in a row so that they stopped doing some usual activities during the 12 months before the survey) compared with their U.S. peers in 2013 (25.7% vs. 29.9%), but there was no significant change from the reported 27% in 2011 in Kentucky (Table 1). Kentucky female students were significantly more likely to feel sad or hopeless than males in 2013 (31.7% vs. 20.0%) (Table 2).

Table 2: Prevalence of risk behaviors among Kentucky high school students, 2013, by gender.

Kentucky 2013 YRBS (selected questions)	All	Female	Male	p-value^a
Unintentional Injuries and Violence				
Carried a weapon	20.7	7.6	33.5	0.00
Carried a gun	7.5	2.5	12.3	0.00
Carried a weapon on school property	6.4	2.7	9.7	0.00
Were threatened or injured with a weapon on school property	5.4	3.8	6.6	0.02
Were in a physical fight	21.2	13.4	28.8	0.00
Were injured in a physical fight	2.8	1.6	3.8	0.00
Were in a physical fight on school property	6	4.1	7.7	0.00
Did not go to school because they felt unsafe at school or on their way to or from school	7	7.2	6.6	0.64
Were electronically bullied	13.2	16.4	9.9	0.00
Were bullied on school property	21.4	24.1	18.6	0.01
Were ever physically forced to have sexual intercourse	9.6	11.9	7.2	0.00
Experienced physical dating violence	9.8	11.8	7.6	0.03
Experienced sexual dating violence	9.8	13.1	6.4	0.00
Felt sad or hopeless	25.7	31.7	20	0.00
Seriously considered attempting suicide	15	19.2	10.9	0.00
Made a plan about how they would attempt suicide	12.6	14.3	10.9	0.03

Attempted suicide	7.7	9.2	5.9	0.02
Attempted suicide that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse	2.9	3.2	2.6	0.51
Alcohol and Other Drug Use				
Drank alcohol before age 13 years	19	16.8	21	0.13
Currently drank alcohol	30.4	28	32.6	0.12
Usually obtained the alcohol they drank by someone giving it to them	34.1	42.9	27	0.00
Had five or more drinks of alcohol in a row	19.4	15.4	23.3	0.00
Reported that their largest number of drinks in a row was 10 or more	6.3	4	8.6	0.00
Ever used marijuana	34	30.6	36.9	0.06
Tried marijuana before age 13 years	8.5	6	10.6	0.01
Currently used marijuana	17.7	15.3	20	0.04
Ever used cocaine	4.5	2	6.5	0.00
Ever used hallucinogenic drugs	—	—	—	
Ever used inhalants	7.1	7.2	6.7	0.76
Ever used ecstasy	4.2	2.1	5.8	0.00
Ever used heroin	—	—	—	
Ever used methamphetamines	3.7	2.5	4.3	0.09
Ever took steroids without a doctor's prescription	2.9	1.5	3.8	0.02
Ever took prescription drugs without a doctor's prescription	12.4	12	12.6	0.71
Ever injected any illegal drug	—	—	—	
Were offered, sold, or given an illegal drug on school property	20.6	15.9	24.8	0.00
Sexual Behaviors				
Ever had sexual intercourse	44.7	43.3	45.9	0.42
Had sexual intercourse before age 13 years	5.4	3.2	7.5	0.00
Had sexual intercourse with four or more persons	12.6	10.5	14.4	0.07
Were currently sexually active	31.7	32.3	31	0.65
Did not use a condom	46.9	54.9	37.9	0.00
Did not use birth control pills	80.1	75.8	84.7	0.02
Did not use an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon)	97.4	97.3	97.5	0.83
Did not use a shot (e.g., Depo-Provera), patch (e.g., OrthoEvra), or birth control ring (e.g., NuvaRing)	95.1	93.2	97.1	0.01
Did not use birth control pills; an IUD or implant; or a shot, patch, or birth control ring	72.7	66.3	79.4	0.00
Did not use both a condom during and birth control pills; an IUD or implant; or a shot, patch, or birth control ring before last sexual intercourse	93.4	91.5	95.4	0.04
Did not use any method to prevent pregnancy	15.1	18.6	11.2	0.01
Drank alcohol or used drugs before last sexual	18.7	13.6	23.8	0.00

intercourse				
Were never taught in school about AIDS or HIV infection	19.3	19.7	18.5	0.58
Were never tested for HIV	—	—	—	

^a p-value for the t-test comparing prevalence between Kentucky male vs female high school student risk behaviors, 2013.

3) Bullying

More than one fifth (21.4%) of the KyHSS reported being bullied on school property (during the 12 months before the survey) in 2013, percentage that is not significantly different from the one reported in 2011 (18.8%) and from the reported school bullying among the U.S. HSS in 2013 (19.6%) (Table 1). The prevalence of having been electronically bullied (including being bullied through e-mail, chat rooms, instant messaging, websites, or texting during the 12 months before the survey) in 2013 among the KyHSS (13.2%) was comparable to the one for the U.S. HSS (14.8%). The KyHSS however reported significantly lower prevalence of being electronically bullied in 2013 than in 2011 (17.4%). Kentucky female students were much more likely than the male students to be bullied on school property (24.1% vs. 18.6%) or electronically bullied (16.4% vs. 9.9%) (Table 2).

4) Dating violence (physical or sexual)

Among the KyHSS who dated or went out with someone during the 12 months before the 2013 survey, 9.8% reported that they experienced physical dating violence (one or more times during the 12 months before the survey, including being hit, slammed into something, or injured with an object or weapon on purpose by someone they were dating or going out with) (Table 1). There was no significant difference between the KyHSS and the U.S. HSS in the prevalence of physical dating violence (9.8% vs. 10.3%) as well as the prevalence of the sexual dating violence (9.8% vs. 10.4%), 2013. Both questions were not included in the 2011 Kentucky YRBS. Kentucky female HSS were at significantly higher risk than male HSS for experiencing physical dating violence (11.8% vs. 7.6%) and sexual dating violence (13.1% vs. 6.4%) (Table 2).

5) Forced to have sexual intercourse

KyHSS reported significantly higher prevalence of 'ever being physically forced to have sexual intercourse when they did not want to', compared with their U.S. peers, 2013 (9.6% vs. 7.3%). The Kentucky prevalence didn't improve significantly in 2013 from the reported

11.0% in 2011. Kentucky female students were significantly more likely to reply 'yes' to the question 'ever forced to have sexual intercourse' than the male students, 2013 (11.9% vs. 7.2%).

6) Did not go to school because they felt unsafe at school or on their way to or from school

Seven percent of the KyHSS reported they did not go to school because they felt unsafe at school or on their way to or from school (on at least 1 day during the 30 days before the survey). This is a small but insignificant decrease from the 8.4% reported in 2011. The corresponding prevalence for the U.S. High School Students in 2013 was 7.1%. There was no significant difference in the percentage of female and male KyHSS who didn't go to school at least once during the 30 days before the 2013 surveys because they felt unsafe (7.2% vs. 6.6%).

7) Physical fight

KyHSS were significantly less likely to be in a physical fight (one or more times during the 12 months before the survey) in 2013 (21.2%) than in 2011 (28.7%), and significantly less likely than their U.S. peers in 2013 (24.7%) (Table 1). The prevalence of being in a physical fight on school property (one or more times during the 12 months before the survey) among KyHSS was significantly lower in 2013 than in 2011 (6.0% vs. 11.4%); the 2013 Kentucky prevalence was significantly lower than the 2013 U.S. prevalence (6.0% vs. 8.1%). Although, there was no significant difference in the percentage of HSS injured in a physical fight in Kentucky and in the U.S., 2013 (2.8% vs. 3.1%), the reported 2013 Kentucky prevalence suggested a decrease from the reported 2011 Kentucky prevalence (2.8% vs. 4.2%, p -value=0.05). As expected, Kentucky high school boys were significantly more likely than the girls to be in a physical fight (28.8% vs. 13.4%), to be injured in a physical fight (3.8% vs. 1.6%), or to be in a physical fight on school property (7.7% vs. 4.1%).

8) Risk behaviors related to weapons

From 2011 to 2013 there were no significant changes in the percentage of KyHSS who (on at least one day during the 30 days before the survey): 1) carried a weapon (such as a gun, knife, or club) (22.8% vs.20.7%); 2) carried a gun (8.6% vs.7.5%); or 3) carried a weapon on school property (such as a gun, knife, or club) (7.4% vs.6.4%) (Table 1). There were no significant differences between the 2013 Kentucky and U.S prevalence on carrying a weapon

(20.7% vs. 17.9%), carrying a gun (7.5% vs. 5.5%), or carrying a weapon on school property (6.4% vs. 5.2%). However, KyHSS were less likely than the U.S. HSS to being threatened or injured with a weapon on school property (5.4% vs. 6.9%).

Significantly higher percentage of Kentucky high school boys than girls carried a weapon on at least one day during the 30 days before the survey (33.5% vs 7.6%), carried a gun (12.3% vs. 2.5%), carried a weapon on school property (9.7% vs. 2.7%), or were threatened or injured with a weapon on school property during the 12 months before the survey (6.6% vs. 3.8%).

9) Alcohol use

KyHSS were as likely as the U.S. HSS to had drank alcohol before age 13 years (for the first time other than a few sips) (19.0% vs. 18.6%), and no substantial change in the early onset of alcohol use among KyHSS was observed since 2011 (20.5%) (Table1). Significantly lower percentage of KyHSS reported having five or more drinks of alcohol in a row (within a couple of hours on at least 1 day during the 30 days before the survey) in 2013 than in 2011 (19.4% vs. 23.2%); no differences in the prevalence among the Kentucky and the U.S. HSS, 2013 (19.4% vs. 20.8%).

The Kentucky high school girls were as likely as the boys (16.8% vs. 21.0%) to start drinking alcohol before age of 13 years, according to 2013 Kentucky YRBS (Table 2). However, the boys were more likely than the girls to have five or more drinks of alcohol in a row (within a couple of hours on at least 1 day during the 30 days before the survey) (23.3% vs.15.4%).

10) Drug use

Although KyHSS were less likely than U.S. HSS to report in 2013 that they have ever used marijuana in their life (34.0% vs. 40.7%) and that they used marijuana one or more times during the 30 days before the survey (17.7% vs. 23.4%), no change in marijuana usage (ever or during the last 30 days) was seen among Kentucky students between 2011 and 2013 (Table 1).

The 2013 Kentucky YRBS didn't include the questions on the use of heroin and the injection of illegal drugs. The most recent Kentucky data is from the 2011 YRBS, showing that 5.2% of the KyHSS ever used heroin, a significantly higher percentage than the reported 2.9% for the U.S.HSS in 2011 (p-value=0.01, data not shown in the tables). Also, 4.2% of the

KyHSS reported in 2011 that they ever injected any illegal drugs, compared with 2.3% for the U.S.HSS in 2011 (p-value=0.00; data not shown in the tables).

The KyHSS reported significantly lower prevalence in 2013 than in 2011 on several risk behaviors related to drug use: 1) ever used any form of cocaine (powder, crack, or freebase) one or more times in their lifetime (4.5% vs. 7.5%); 2) ever used inhalants (7.1% vs. 11.4%); 3) ever used ecstasy (4.2% vs. 6.6%); 4) ever used methamphetamines (3.7% vs. 5.6%); 5) ever took steroids without a doctor's prescription (2.9% vs. 5.3%); 6) ever took prescription drugs without a doctor's prescription (12.4% vs. 19.0%); 7) were offered, sold, or given an illegal drug on school property (during the 12 months before the survey) (20.6% vs. 24.4%).

Kentucky high school boys were more likely than the girls to try marijuana before age 13 years, currently used marijuana, ever used cocaine, ever used ecstasy, took steroids without a doctor's prescription, or were offered, sold, or given an illegal drug on school property (Table 2).